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ABSTRACT

The United States is a labor surplus society, one with a persistent shortage of jobs. This labor surplus--manifested in excessively and persistently high unemployment--will continue through the 1980s. The existence of a persistent job shortage, resulting in a labor surplus of four to six million unemployed workers without a constructive economic role, threatens the stability of America's economic, social, and political institutions. Aggravated by trade and technology developments, the labor-surplus condition will affect young and old, black and white, blue collar and white collar. This labor surplus underclass threatens the stability of the nation's economic, social, and political institutions and weakens the United States competitive position in the world economy. Without determined and effective action to change economic conditions and to increase job opportunities, America will move from the 1980s into the 1990s with an increasingly significant labor surplus. (The paper contains many tables and graphs showing present and predicted unemployment; labor force statistics; unemployment by race, age, and sex; changes in occupation; occupational profiles for the 1980s; the influence of robotics; and the influence of the balance of trade.) (KC)

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THE FUTURE OF WORK

A REPORT BY THE
AFL-CIO COMMITTEE ON THE EVOLUTION OF WORK
AUGUST 1983

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The Committee on the Evolution of Work

The AFL-CIO Executive Council in August 1982 established the Committee on the Evolution of Work to review and evaluate changes that are taking place in America in the labor force, occupations, industries, and technology.

The members of the Committee are:

Albert Shanker, president, American Federation of Teachers;

Glenn E. Watts, president, Communications Workers of America;

Charles H. Pillard, president, International Brotherhood of Electrical Workers;

Lloyd McBride, president, United Steelworkers of America;

William H. Wynn, president, United Food and Commercial Workers International Union;

John J. Sweeney, president, Service Employees International Union;

Barbara Hutchinson, vice-president, American Federation of Government Employees;

Richard I. Kilroy, president, Brotherhood of Railway, Airline and Steamship Clerks, Freight Handlers, Express and Station Employees;

Howard D. Samuel, president, Industrial Union Department;

Robert F. Harbrant, president, Food and Beverage Trade Department;

Jack Golodner, director, Department for Professional Employees.

The chairman of the Committee is AFL-CIO Secretary-Treasurer **Thomas R. Donahue**.

The committee met regularly during the past year to consider its mission and to receive reports from a variety of experts, including Professor Richard B. Freeman of Harvard University and the National Bureau of Economic Research; Peter Hart of Hart & Associates; Professor Thomas A. Kochan of Massachusetts Institute of Technology; Professor Sar Levitan, director of the Center for Social Policy Studies at George Washington University; Professor Steven M. Miller of Carnegie-Mellon University; Jerome M. Rosow, president of Work in America Institute; and Paul A. Strassman, vice president of Xerox Corporation.

This is an initial report from the committee, based on information received by the committee and on the deliberations of the committee.

The Future of Work

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The Future of Work:

A Report by the AFL-CIO Committee on the Evolution of Work

The United States is a labor surplus society, a society with a persistent shortage of jobs. This labor surplus -- manifest in excessively and persistently high unemployment -- will continue through the 1980s.

The existence of a persistent job shortage, resulting in a labor surplus of four to six million unemployed workers without a constructive economic role, threatens the stability of America's economic, social and political institutions.

I. An Introduction: Labor Surplus and Job Shortage

Massive changes in the structure of the U.S. economy are under way. This industrial evolution will continue.

Technology is displacing workers and overturning traditional work patterns. Industries and occupations are changing. Imports threaten more and more jobs. A high-value dollar discourages foreigners from buying U.S. exports.

More women and minority workers will be looking for jobs during the 1980s. And young people face special problems in a labor surplus society.

Recession-depression and slow economic growth have raised the number of jobless Americans to levels that would have been considered unthinkable less than 10 years ago.

Such high levels of unemployment are intolerable today because they injure and destroy individual and families, because they weaken and disrupt society.

Even for workers fortunate enough to have a job, good wages and good working conditions are too often lacking in the new service-oriented economy.

The American standard of living is threatened by these shifts.

What will be the result of a labor surplus continuing into the 1990s? What will excessively high unemployment do to America?

Waste of human and material resources on a stupendous scale occurs when millions of Americans cannot find jobs.

The nation loses \$100 billion in goods and services and in income for every one million jobless workers.

Human suffering, dependency, frustration, and alienation increase among the unemployed.

Crime, social unrest, and family breakdowns occur more often when unemployment is high.

Living standards fall, or rise very slowly, when economic growth and job creation slow down and unemployment rises.

The U.S. competitive position in the world economy is weakened when continuing labor surplus, lost income, lost buying power, and lost production reduce U.S. output and productivity.

A serious consequence of a continuing labor surplus is a loss of sense of national purpose and national will, a loss of confidence in the nation's economic, social and political institutions, a loss of nerve, a loss of belief in the capacity of a democratic society to meet and solve the nation's problems in the last two decades of the 20th Century.

The AFL-CIO insists that there are solutions to the labor surplus, that these solutions must be put into effect promptly and decisively.

We do not accept the dole as a realistic or desirable alternative to gainful employment in productive jobs.

Unless successful solutions are put into effect, America in the 1990s will be more and more polarized, more and more unstable -- and will be operating far below its full potential in an increasingly competitive world economy.

2. Technology Is Changing the U.S. Economy

Technology is changing the structure of the U.S. economy, changing industries and occupations, changing international trade patterns, changing the economic foundations of national power and national security -- and also contributing to the nation's labor surplus.

The new microtechnology with its information-communications potential is bringing change which is perhaps even more revolutionary than the industrial revolution brought by the steam engine in the 19th century and the transportation revolution brought by the internal combustion engine earlier in the 20th century.

It is clear that advancing technology brings -- in addition to its benefits -- social and economic costs, including downgrading and displacement of workers and job loss. Too often the progress of technology results in plant shutdowns and more workers jobless or working at lower pay with reduced income.

Robots in the factory, word processors in the office, scanners at the check-out counter, push-button banking, computers in the home, and communications satellites in the sky remind the nation of the pervasive impact of advancing technology. They seem to offer a promise of millions of new "high tech" jobs.

But high technology is an oversold promise to a nation suffering serious declines in basic industries like steel, auto, and chemicals.

The promise of a bright "high tech" future suggests that information-processing and service and aerospace industries using computers and microprocessors and robots will replace lost output and lost jobs in basic industries.

This view holds that by strengthening research and development efforts, by accelerating innovation of new technology, and by exporting older technologies as well as high-technology products, the United States can maintain and widen its comparative advantage in international trade.

But this optimistic view ignores the need to maintain and restore the strength and competitiveness of the nation's basic industries. These basic industries are essential to a healthy, expanding, pluralistic economy.

There won't be enough "high tech" jobs to replace the jobs lost in declining industries. For example, while computer occupations will increase by more than 45 percent over the decade of the 1980s, this represents an increase of only 600,000 jobs -- from 1.5 million in 1980 to 2.1 million in 1990, still only 1.5 percent of the 1990 labor force.

Many of the jobs in "high tech" industries around Boston and California's Silicon Valley and North Carolina's Research Triangle employ low-paid assembly workers -- many of them women, minorities and young -- whose work can easily be automated or shipped out to lower U.S. wage areas or even out of the country.

A recent spectacular example of this export of jobs in pursuit of low-wage labor is the shift by Warner Communications of a large segment of its Atari subsidiary manufacturing operations to overseas locations where wage costs would be significantly less than the low wages paid by Atari in California. High tech manufacturing is highly mobile.

But high technology is spreading throughout the U.S. economy into almost every sector and every industry. There are now some 6,000 robots and 2 million desk-top computers in use in the United States. By 1990, there may be up to 100,000 robots and 20 million computers in use. One expert appearing before our Committee predicted that eventually robots will replace about three million

workers in the metal working industries (currently concentrated in the Great Lakes area).

As computers and robots take over more and more functions in the factory and the office, a two-tier work force is developing. In some cases, jobs are being upgraded. In many other cases, jobs are being downgraded. (In some production processes, computerization may lead to a narrowing of skill differentials between supervisors and production workers when both need detailed knowledge of a relatively complicated process.)

At the top will be a few executives, scientists and engineers, professionals, and managers, performing high-level, creative, high-paid full-time jobs in a good work environment. And the executives among them will decide whether the work will be done by people or by robots, whether the work will be done in Terre Haute or Taiwan.

At the bottom will be low-paid workers performing relatively simple, low-skill, dull, routine, high-turnover jobs in a poor work environment. These jobs will often be part-time and usually lacking job security and opportunities for career advancement. Too often these jobs are over-supervised and lacking in any control over the pace of work.

Between these two major tiers will be fewer and fewer permanent, well-paid, full-time, skilled, semi-skilled, and craft production and maintenance jobs which in the past have offered hope and opportunity and upward mobility to workers who start in low-paid, entry-level jobs. Many middle management jobs will also be gone.

The loss of middle-level, good-pay jobs raises serious questions about inadequate growth of consumer buying power in the future and about loss of opportunities for upward economic and social mobility. It also raises serious

questions about social stability if middle-class America becomes relatively smaller and has less job security and lowered income expectations.

Office and clerical work has been a huge source of jobs for millions of women workers. But automation, data processors and word processors have invaded the office. Some jobs are being upgraded but more jobs are being de-skilled and downgraded. Office automation in a fixed work situation will reduce employment. The net effect of office automation will probably slow down growth in office and clerical job opportunities in the future.

Other white-collar jobs, including supervisors, managers, and professional jobs, are facing de-skilling and downgrading and displacement as a result of new technology. There are estimates of 500,000 surplus college graduates in 1990 -- people who cannot find jobs which use their education and skills. Of course, some of the new white-collar jobs will require new skills which bring upgrading and higher pay.

At this stage of industrial evolution, these new skills are not yet fully recognized or identified. The danger is that existing patterns of education and training will perpetuate and widen employment and earnings gaps in this more polarized, two-tier occupational structure.

Below the two-tier work force is the labor surplus underclass, the workers who don't have jobs and don't have job prospects. There is some movement in and out of this labor surplus underclass, but upward movement essentially is limited to the bottom level of the two-tier work force.

What happens to a society increasingly polarized by wide earnings and income gaps between those who work? And what happens to a society in which the income gap between low-pay workers and the jobless, labor surplus underclass becomes smaller and smaller?

Humanizing Technology -- Experience shows that technological change can be humanized, that adverse effects can be minimized and cushioned through a variety of arrangements, including advance notice to workers and affected communities, no-layoff attrition, early retirement, supplemental unemployment benefits and severance pay, continuation of health benefits and protection of retirement entitlements, and training-retraining-upgrading opportunities for workers to learn new skills for new jobs with the new technology.

These and many other arrangements can ease the transition for workers and local communities hit by job-destroying technological change, plant shutdowns, and major layoffs.

To prevent downgraded and unemployed workers from being forever trapped in de-skilled, low-pay jobs -- or in the no-job, labor-surplus underclass -- re-organization of work should adapt technology to people, education and training should upgrade and re-skill workers, and private and public programs should develop career and earnings ladders for upward mobility.

The progress of technology opens the door for a wide range of social and political decisions in addition to technical and economic decisions. It also opens the door for re-evaluation and re-definition of skills and skill levels.

Thus, technology must widen the range of leisure-increasing options, increase options for creating and distributing the nation's wealth, and raise new opportunities for widespread citizen participation in political, social and cultural life.

But such improvements in the quality of life are threatened by the continued existence in our democratic society of a labor-surplus underclass which does not share these potential benefits from advancing technology.

Quality of Work Life -- There are new and growing desires among many workers for recognition of individual dignity and for a job in which the worker is in some way involved and fulfilled. This is a long-standing concern of the American labor movement along with fair compensation, job security, and other conditions of employment. Employers usually see "quality of work life" programs as a way to raise productivity and increase competitiveness -- and sometimes as a way to fight unions -- rather than as a way to increase worker participation in company decision-making.

The more than 1,000 QWL programs now under way take many different forms -- labor-management committees, participatory management, employee involvement, shop-floor democracy, consultation schemes, quality circles, autonomous work groups, quality of work teams, profit-sharing arrangements, and so forth. Some are within the framework of collective bargaining, some are supplementary to collective bargaining, and some are aimed at circumventing and weakening collective bargaining or preventing union organizing and union recognition.

Where QWL is perverted into a management tool or weapon used against workers and unions, skepticism and opposition result. But where QWL programs truly serve worker as well as management interests, unions have cooperated and supported such programs.

Hours of Work -- To create more jobs and to increase leisure a reduction of the workweek is in order. In the first 40 years of this century the average workweek fell from 60 hours to 40 hours. But the standard workweek has been unchanged now for almost 50 years. Past and future gains from rising productivity make the reduced workweek affordable and justifiable and, indeed, necessary.

Existing overtime pay requirements do not sufficiently deter employers from requiring frequent and continuing overtime. This puts an excessive and unhealthy

strain on currently employed workers and deprives unemployed workers of jobs. Raising the overtime penalty can produce more leisure and health and more jobs.

3. Industry and Occupation Changes Bring New Job Structure

Job loss and labor surplus continue. Plant closings and displaced workers are part of this gloomy picture.

Under labor surplus conditions, unemployment cuts across all industries and occupations and demographic groups. The ranks of the labor surplus include jobless workers from all groups.

Unemployment hits blue-collar workers and service workers harder than white-collar workers, although joblessness among white-collar workers is also growing more serious. Workers in construction, mining and manufacturing suffer high unemployment also. Black, Hispanic, and other minority workers and young people have particularly serious unemployment problems. And illegal aliens swell the ranks of job-seekers.

In 1960, manufacturing accounted for one out of every four jobs. By 1980 it was responsible for one out of five, and by 1990 only one out of six. But even in manufacturing the proportion of "non-production" service jobs will increase as automation and robots replace blue-collar production workers.

The service-producing sector will continue to be the major source of new jobs. From 1940 to 1980, business and personal service industries such as health care, education, wholesale and retail trade, repair and maintenance, government, transportation, banking and insurance increased their share of total employment from about 45 percent to about 70 percent. Business services have shown the biggest job gains.

The decline of jobs in manufacturing and the increase of jobs in the service sector have significant implications for earnings and income. In 1982 average

weekly earnings in manufacturing were \$331. By contrast, weekly earnings were \$245 in finance, insurance, and real estate, \$225 in personal and business services, and \$198 in wholesale and retail trade.

Service occupations will increase in goods-producing industries as well as in service-producing industries. In the 1970s, about 90 percent of all new jobs added to the economy were in service occupations. By 1990, service industries will employ 72 percent of the labor force, about 90 million workers.

Unfortunately, job growth in the 1980s will be biggest in traditionally low-pay, high-turnover jobs like sales, clerical, janitorial and food service work. Too often these jobs don't have career opportunity ladders leading to higher skill, higher pay jobs.

This will bring a relative lowering of the overall wage base and a debasing of the nation's wage structure. Under the current wage system for valuing workers' contribution there are clearly going to be a lot of poor working people. Society must accept the idea that the people in these traditionally low-pay jobs must get a decent, living wage.

4. Trade Affects Jobs

The U.S. labor surplus is also related to the nation's trade policies.

About 25 percent of the nation's economy is directly related to international trade. Exports create jobs and income. Imports add to the nation's supply of goods and services.

Millions of American workers have lost their jobs as a result of excessive and unfair imports and as a result of U.S. exports of technology, production and jobs. Large-scale, trade-related job loss has occurred not only in manufacturing but also in services.

In part this is the result of aggressive competition in world markets from other exporting nations which have acquired or developed up-to-the-minute technology. In part it is the result of unfair trade practices with which other nations penetrate huge U.S. markets while erecting barriers to U.S. exports. In part it is the result of a high-value dollar which raises the cost of U.S. exports to foreigners and underprices U.S. imports.

In 1982 U.S. imports were greater than exports by \$48 billion, and the trade deficit is expected to be twice as big in 1983. Exports have fallen off in key industries -- capital equipment like industrial machinery, computers, communications equipment, autos and aerospace. Imports in these categories have been rising sharply.

There is a clear link between growth of imports and job loss in a number of industries like apparel, auto, and steel. Job loss also results from U.S.-based multinational corporations' export of capital, technology, production, and jobs to their foreign affiliates.

5. Labor Force Will Be Changing

Labor surplus will continue in spite of a slowdown in population growth and slowdown in labor force growth in the 1980s.

The U.S. population, now about 235 million, will be close to 245 million in 1990. The civilian labor force, now about 112 million, will reach about 125 million in 1990. It will be an older and more female work force.

One result of falling birth rates is fewer young people in the labor force. Because of the "baby bust" in the 1960s and 1970s, the number of young people aged 16 to 24 will drop from 26 million in 1980 to 24 million in 1990. Within this overall drop, however, the number of black and Hispanic workers will increase slightly.

There will be about 3 million blacks aged 16 to 24 and about 1.5 million Hispanics in this age group by 1990.

Black labor force participation has been increasing as a result of sharply rising labor force participation by black women, even though labor force participation by black men has remained about the same over the past 10 years.

Women will account for two out of three additions to the labor force through the 1980s. The female labor force participation rate, now 52.5 percent, will reach about 60 percent by 1990. By contrast, men's labor force participation rate will remain about 77 percent. By 1990 the civilian work force will have about 58 million women and 67 million men.

The big increase in the labor force will come in workers aged 25 to 54 years. As the baby boom generation of the 1950s matures, workers aged 25 to 54 will increase from 65 million in 1980 to 88 million in 1990. By contrast, the number of older workers aged 55 to 64 is expected to decline from about 12 million to 11 million as early retirement becomes a more frequent alternative to work or unemployment.

Immigration, both legal and illegal, will continue to affect labor force growth. If legal immigration remains at about half a million a year and illegal immigration is another quarter to a half million a year, a significant part of labor force growth during the 1980s will come from new foreign workers.

The geographical distribution of population and labor force has shifted toward the Southeast and Southwest. Since 1970, population in these two areas has grown six times as fast as the Great Lakes and New England regions, with much of the growth in rural areas. The West and the South led in job growth. In the 1970s, employment increased most in California, Texas, and Florida, while New York State actually showed a small decline in jobs.

People and jobs also have been moving to suburbs and rural areas outside major metropolitan areas. This shift is raising problems for many of the blacks, Hispanics, and other minority groups left behind in central cities with declining job opportunities.

These shifts of people and jobs are enlarging the labor-surplus urban underclass, not only in the older cities of the Northeast and Great Lakes states but throughout the nation.

6. Persisting Shortage of Four to Six Million Jobs

The simple fact is that the job shortage in America is getting bigger and bigger. Unemployment is getting higher and higher and staying higher and higher.

But the job shortage is not inevitable. It reflects economic policy failures and the low priority of full employment. The major factor determining levels of employment and unemployment is national economic policy -- currently geared to slow economic growth and inadequate job creation.

Since 1950 each major recession has left the United States with higher levels of unemployment. At the end of 1982, the unemployment rate reached 10.8 percent, representing more than 12 million jobless workers. Unemployment in 1983 will average more than 11 million workers.

Unfortunately, the massive job shortage which exists in 1983 will continue. Five-year projections by a wide range of experts tell us that unemployment in 1988 will still be up around 7.5 percent, representing more than 8 million jobless workers. Even if the current economic recovery continues and there is no serious recession, this would still be worse unemployment than the recession year 1980 and far above the 5.8 percent unemployment rate in the last non-recession year, 1979.

How can we explain the current and projected job shortage?

Fifteen years of slow economic growth with four serious recession-depressions and increasingly serious international economic competition make up part of the explanation. The long-run slowdown in job creation has been further complicated by increasingly serious job-destroying cyclical downturns.

The "baby boom" of the 1950s and large-scale entry of women and young people in the labor force are another part of the explanation.

New labor-saving technology, shifts in industry output and location, and a changing occupational mix also enter into an explanation of persistent high unemployment.

Unfortunately, national economic policy -- federal spending and taxing policies, money supply and interest rate policies, employment and training policies, and international trade policies -- have failed to give priority to full employment. The lack of a national industrial policy has weakened the nation's response to high unemployment.

In 1978 Congress passed and the President signed the Humphrey-Hawkins Full Employment and Balanced Growth Act which set an interim target of no more than 4 percent unemployment by 1983. In spite of official neglect, the law remains an important statement of intent and direction for the nation's economic policy-makers.

In a nation the size of the United States, some basic low level of "frictional unemployment" represents more or less unavoidable brief, temporary periods for workers between jobs, for workers moving from one part of the country to another, for young people making a transition from school to work, for adults newly entering or re-entering the labor force.

Such frictional unemployment could be as much as 3 or 4 percent of the labor force, and that is why the Humphrey-Hawkins law set a medium-term, five-year

target of "not more than 3 per centum among individuals aged twenty and over and 4 per centum among individuals aged sixteen and over" as an interim target on the way to full employment.

The American labor movement totally rejects acceptance of higher levels of frictional unemployment as unavoidable because of structural changes in the economy. We believe such changes simply require more determined and more decisive action against the existing large-scale job shortage.

To the extent that 11 million jobless workers now far exceed any reasonable definition of frictional unemployment, America has a labor surplus of at least six million workers. By 1988, even under relatively optimistic projections, the labor surplus will still be around four million workers. Given the fallibility of forecasts and projections, unemployment in 1990 could be much higher and the labor surplus/job shortage could be much bigger.

7. The Need for Action

America is big enough and rich enough to keep four to six million Americans on the dole. But that would be foolish and wasteful and immoral. We can put these jobless Americans into real jobs doing productive, gainful work where they can get decent pay for helping to produce what society needs and wants.

The prospect of continuing job shortage and the restructuring now going on in the U.S. economy -- industry, occupation, technology, and trade-related changes -- require determined and decisive action to prevent ever more serious consequences.

Unless there is comprehensive action on a wide range of problems, the nation will experience increasingly serious economic and social problems.

There are no simple and easy solutions to the difficult problems of job creation in a labor surplus economy. Faster economic growth is necessary. Both

private sector and public sector actions are necessary. Much can be done through collective bargaining. But the federal government has a key role.

The AFL-CIO over the years has spelled out a comprehensive set of programs which would attack the nation's problem of labor surplus:

- * National economic policies aimed at full employment, in line with the mandate of the Humphrey-Hawkins Full Employment and Economic Growth Act of 1978.
- * Job-creating community development with federal funds to put jobless workers directly on local government payrolls.
- * Accelerated public works as an investment in the infrastructure to raise the nation's productivity.
- * Human resource and productivity development through better education, training, retraining, upgrading, and upward mobility opportunities for all workers, both employed and unemployed.
- * Anti-discrimination protections to help women, black, Hispanic, and other minority workers.
- * Shorter workweek, reduced workhours per year and higher overtime penalties to open up more job opportunities.
- * Better matching of workers and jobs.
- * Day care for children of working parents.
- * Sanctions and enforcement to stop hiring of illegal workers competing with U.S. citizens for jobs.
- * Minimizing, cushioning and humanizing the adverse effects of industrial, occupational, and technological change.
- * Realistic trade policy and rational industrial policy to achieve job-creating economic growth with balance and diversity, international competitiveness, national security, and rising living standards.

8. Conclusion

America has a large-scale labor surplus, a persistent job shortage condition aggravated by trade and technology developments.

Four to six million jobless workers may become a permanent labor-surplus underclass in a polarized two-tier society. A lack of decent jobs will affect young and old, black and white, blue collar and white collar.

This labor surplus underclass threatens the stability of the nation's economic, social, and political institutions and weakens the U.S. competitive position in the world economy.

Without determined and effective action to change economic conditions and to increase job opportunities, America will move from the 1980s into the 1990s with an increasingly significant labor surplus.

##

APPENDIX

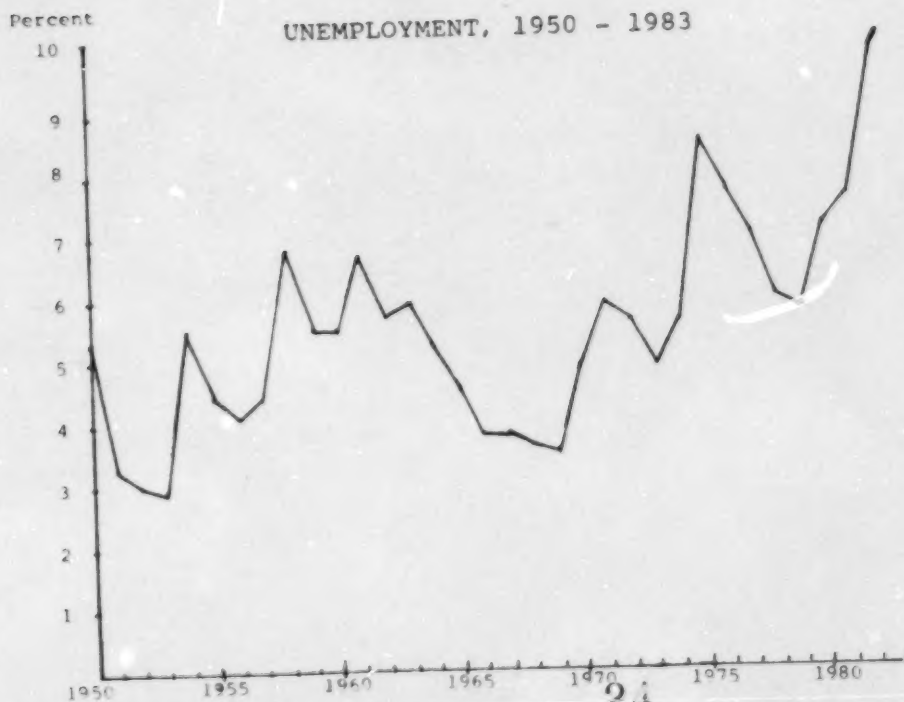
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Unemployment, 1950 - 1983

Year	1950s Unemployment Rate (%)	Year	1960s Unemployment Rate (%)	Year	1970s Unemployment Rate (%)	Year	1980s Unemployment Rate (%)
1950	5.3	1960	5.3	1970	4.9	1980	7.1
1951	3.3	1961	6.7	1971	5.9	1981	7.6
1952	3.0	1962	5.5	1972	5.6	1982	9.7
1953	2.9	1963	5.7	1973	4.9	1983	
1954	5.5	1964	5.2	1974	5.6	Jan	10.4
						Feb	10.4
1955	4.4	1965	4.5	1975	8.5	Mar	10.3
1956	4.1	1966	3.8	1976	7.7	Apr	10.2
1957	4.3	1967	3.8	1977	7.0	May	10.1
1958	6.8	1968	3.6	1978	6.0	Jun	10.0
1959	5.5	1969	3.5	1979	5.8		
low	2.9	low	3.5	low	4.9	low	7.1
high	6.8	high	6.7	high	8.5	high	10.8
							(Dec.1982)

Source: Bureau of Labor Statistics



UNEMPLOYMENT PROJECTIONS

Unemployment, 1979 - 1988

(Actual & Reagan projections for 1983-1988 include armed forces in U.S.)

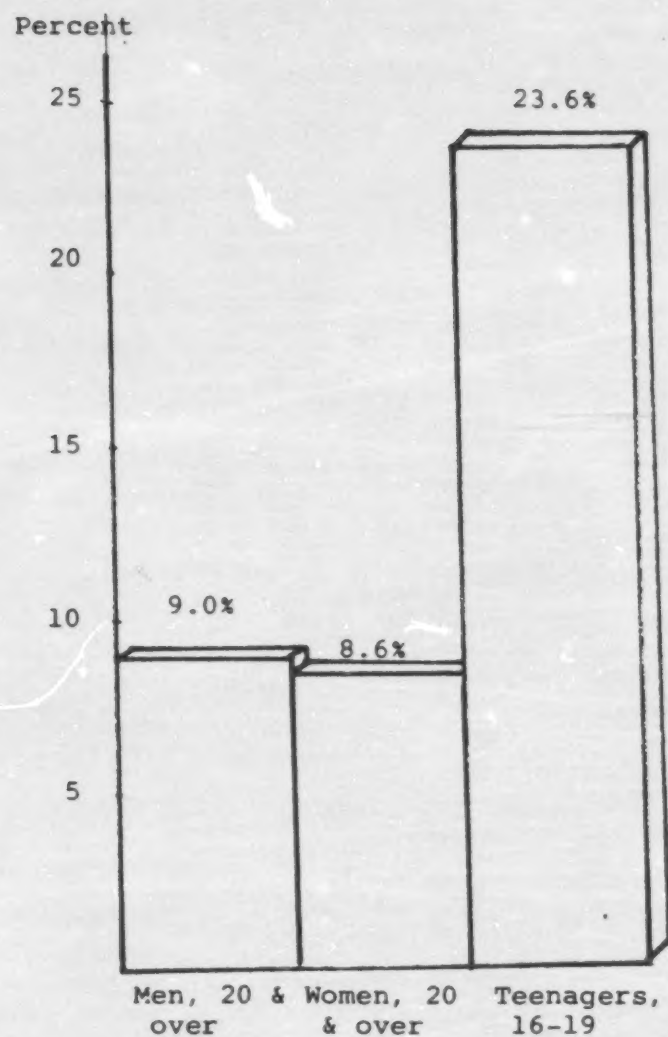
Actual				Projected						
<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>		<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
5.8%	7.0%	7.5%	9.5%	Reagan	9.9%	8.9%	8.2%	7.5%	6.9%	6.2%
				Consensus*	10.1	9.1	8.5	8.1	7.9	7.5

*Blue Chip Consensus is average long-range projections by 40 of 46 economists contacted during early March 1983.

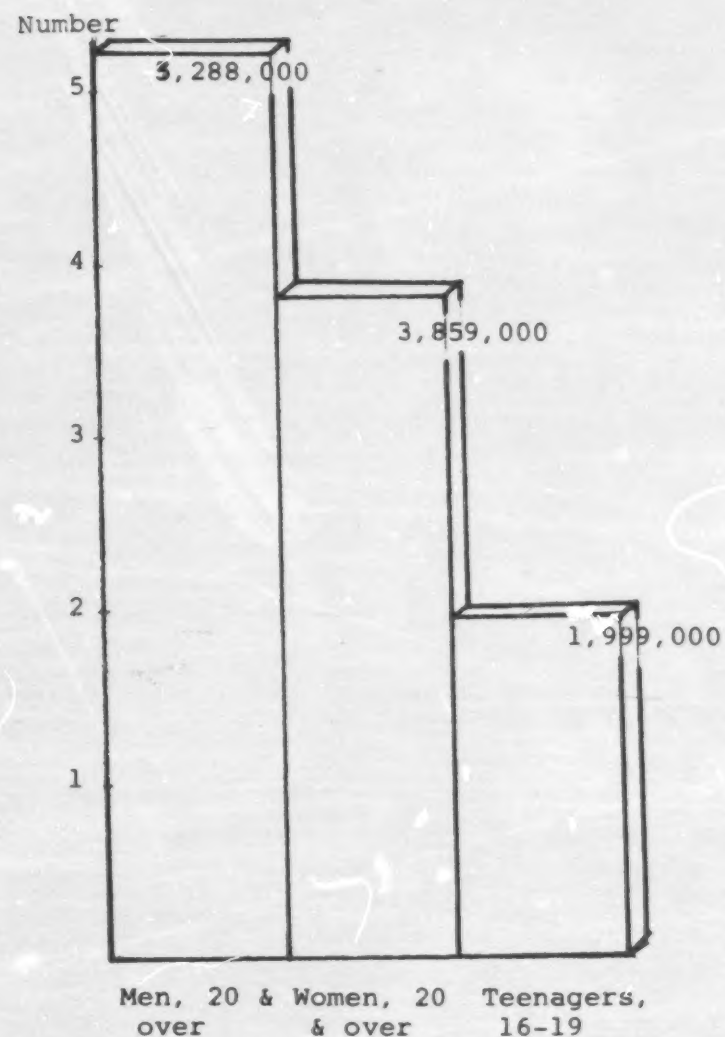
Source: Mid-Session Review of the 1984 Budget, OMB, July 1983 and Blue Chip Indicators, March 1983.

UNEMPLOYMENT BY AGE, SEX, June 1983

PERCENT UNEMPLOYED

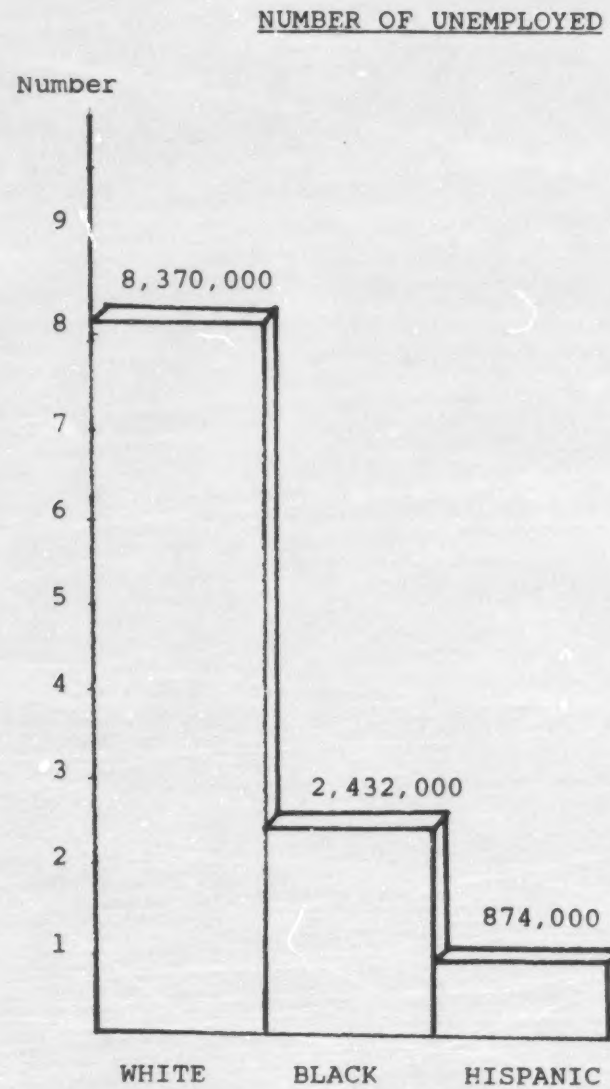
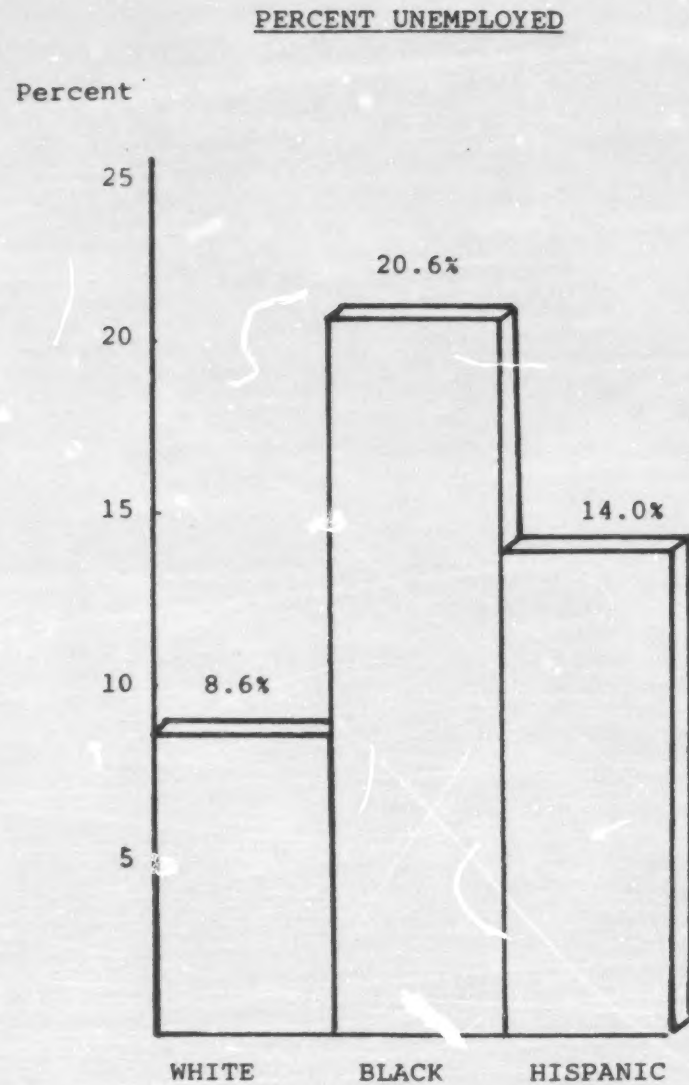


NUMBER OF UNEMPLOYED



Source: BLS, "Employment Situation", June 1983

UNEMPLOYMENT BY RACE, JUNE 1983



Source: BLS, "Employment Situation", June 1983

UNEMPLOYMENT BY OCCUPATION, JUNE 1983
(Civilian Labor Force)

<u>Occupation</u>	<u>Number of Unemployed (000's)</u>	<u>Unemployment Rate (%)</u>
Total, 16 years and over	11,570	10.2%
Managerial & professional specialty	851	3.5
Executive, administrative, and managerial	392	3.5
Professional specialty	460	3.6
Technical, sales & administrative support	2,280	6.8
Technicians & related support	156	5.0
Sales occupations	937	7.3
Administrative support, including clerical	1,187	6.8
Service occupations	1,803	11.4
Private household	89	8.2
Protective service	127	6.7
Service, except private household & protection	1,587	12.4
Precision production, craft, and repair	1,493	10.7
Mechanics and repairers	372	8.3
Construction trades	669	13.0
Other precision production, craft, and repair	451	10.5
Operators, fabricators, & laborers	2,797	14.5
Machine operators, assemblers, & inspectors	1,371	15.0
Transportation & material moving occupations	520	10.9
Handlers, equipment cleaners, helpers, & laborers	906	16.8
Construction laborers	161	17.9
Other handlers, equipment cleaners, helpers, & laborers	745	16.6
Farming, forestry, and fishing	406	8.2

Data not seasonally adjusted

Source: BLS, "Employment Situation," June 1983

UNEMPLOYMENT BY INDUSTRY, JUNE 1983

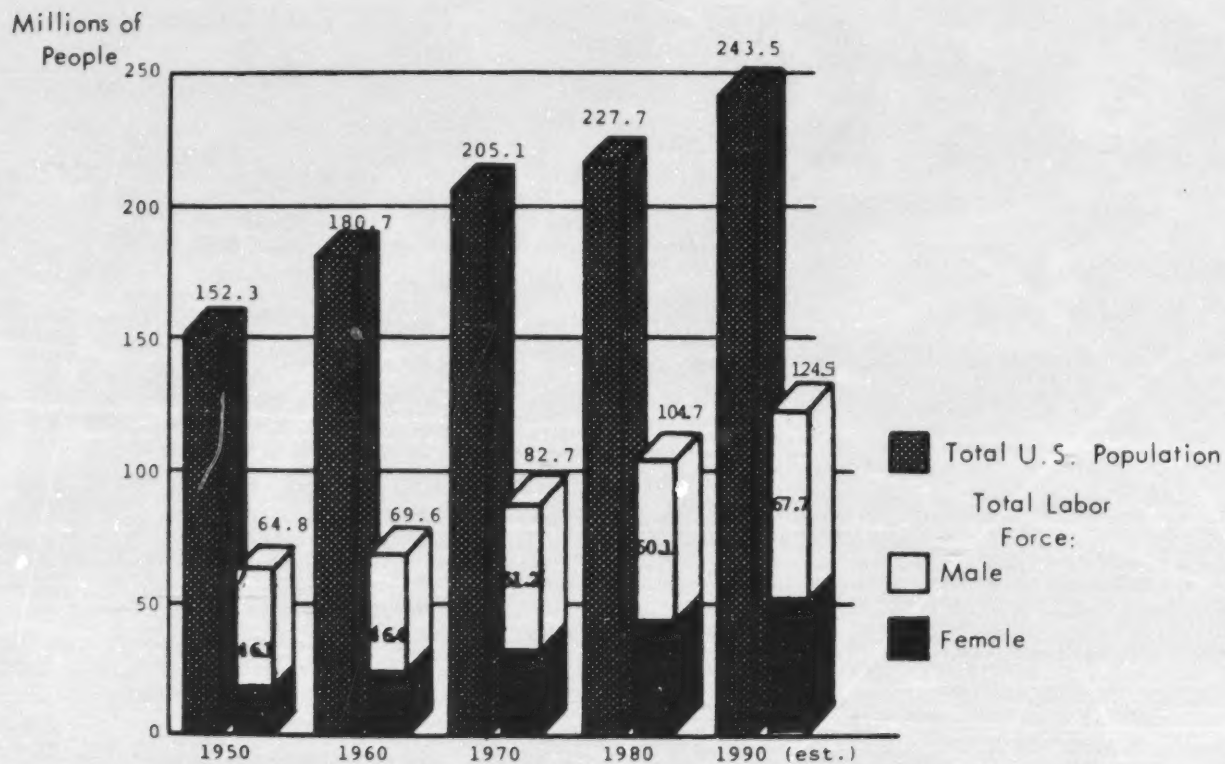
(Civilian Labor Force)

<u>INDUSTRY</u>	<u>Number of Unemployed (millions)</u>	<u>Percent Unemployed (%)</u>
Nonagricultural private wage & salary workers	8.091	10.0%
Mining	.165	18.2
Construction	.987	18.1
Manufacturing	2.752	11.5
Durable Goods	1.730	12.2
NonDurable Goods	1.022	10.4
Transportation & public utilities	.399	7.8
Wholesale & Retail Trade	2.024	10.2
Finance & service industries	1.764	7.2
Government Workers	.774	5.1
Agricultural wage & salary workers	.258	17.0

Seasonally Adjusted data

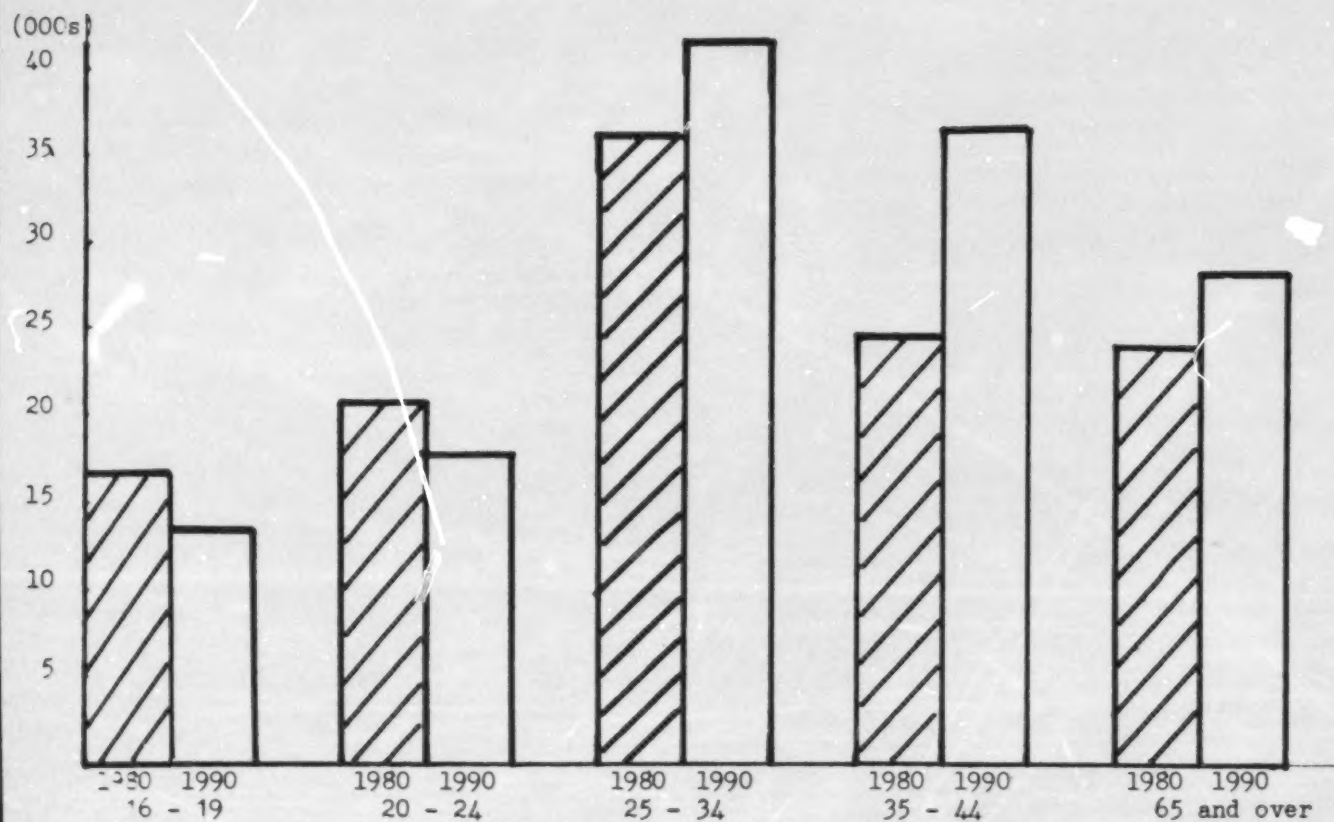
Source: BLS, "Employment Situation," June 1983

MEN AND WOMEN IN LABOR FORCE GROWTH 1950-1990

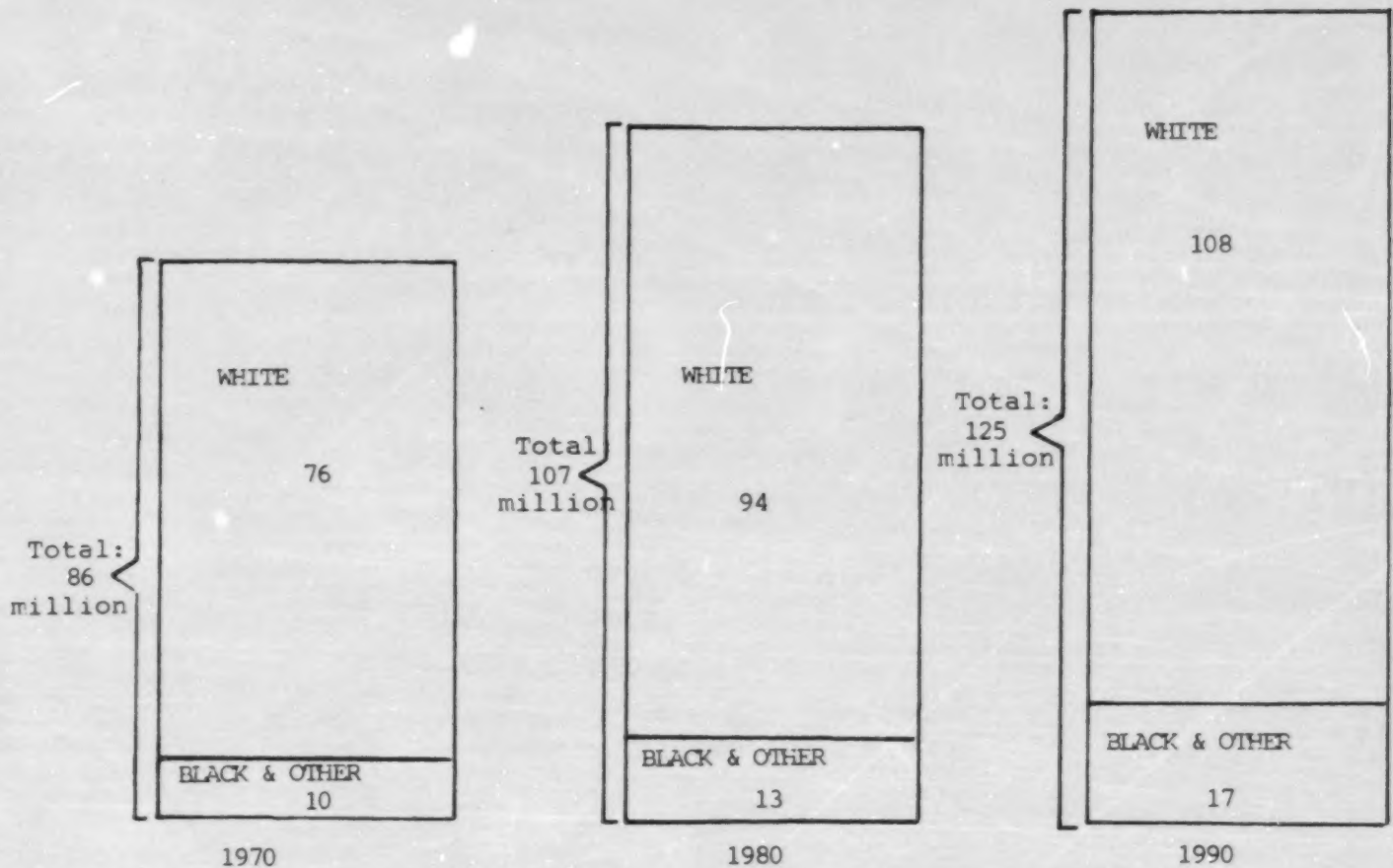


Source: U.S. Bureau of the Census and Bureau of Labor Statistics.

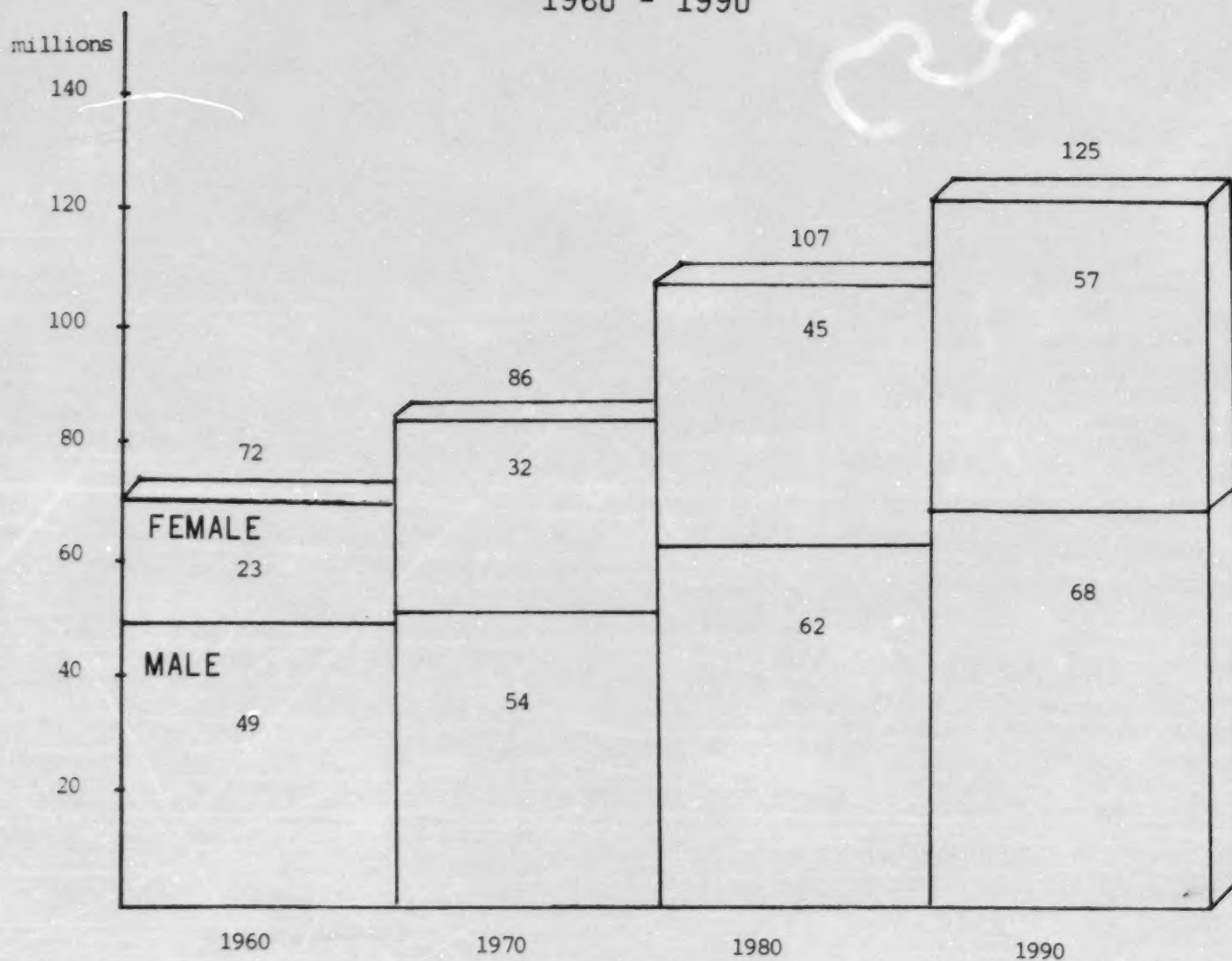
LABOR FORCE BY AGE
1980-1990



LABOR FORCE STATUS BY RACE
1970 - 1990



LABOR FORCE STATUS BY SEX 1960 - 1990



EMPLOYMENT BY MAJOR SECTOR
(millions)

	<u>1969</u>	<u>1979</u>	<u>1985</u>	<u>1990</u>
<u>Total Employed</u>	86.3	104.1	113.8	122.0
Government	14.8	16.5	17.6	18.1
Agriculture	3.5	2.8	2.6	2.3
Mining	0.5	0.7	0.9	1.0
Contract Construction	4.4	5.9	6.7	6.9
Manufacturing	20.5	21.4	22.6	23.5
Durable	12.0	13.0	13.8	14.6
Nondurable	8.4	8.4	8.8	8.9
Transportation	2.9	3.3	3.5	3.7
Communications	1.1	1.3	1.4	1.5
Public Utilities	0.8	0.9	1.0	1.0
Wholesale & Retail Trade	16.7	22.4	24.9	27.0
Finance, Insurance, & Real Estate	3.9	5.5	6.1	7.0
Other Services	13.7	20.2	23.2	26.6
Government Enterprises	1.3	1.4	1.6	1.8
Private Households	2.3	1.7	1.6	1.6

Source: Monthly Labor Review, August 1981

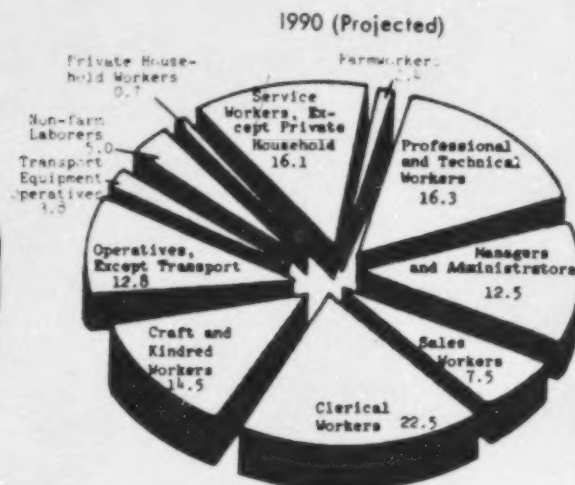
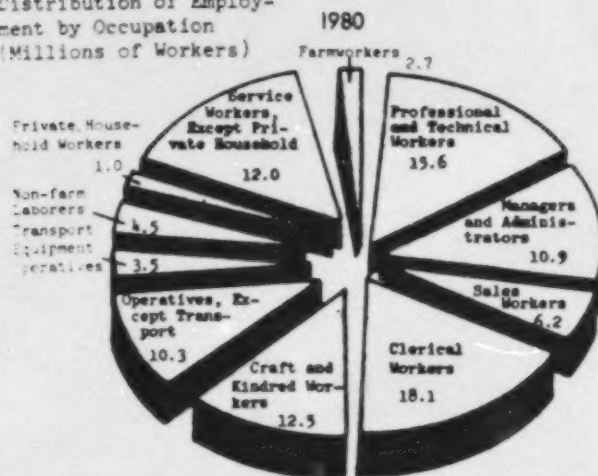
OCCUPATIONAL PROFILE 1980-1990

	1980	1990
Professional	15.6%	16.3%
Managers & Administrators	10.9	12.5
Sales Workers	6.2	7.5
Clerical Workers	18.1	22.5
Craft & Kindred Workers	12.5	14.5
Operatives (including Transport)	13.8	16.6
Non-farm laborers	4.5	5.0
Service Workers (except Private Household)	12.0	16.1
Private Household Workers	1.0	0.7
Farmworkers	3.0	2.4

SOURCE: BLS, Department of Labor

CHANGES IN OCCUPATIONAL OUTLOOK

Distribution of Employment by Occupation
(Millions of Workers)



Sample Occupations That Will...

Decline

- Shoemaking-machine operators
- Farm laborers, owners, and tenants
- Housekeepers, private household
- Secondary-school teachers
- Bus drivers

Expand

- Data-processing-machine mechanics
- Computer-systems operators and analysts
- Office-machine services
- Aero-astronautic engineers
- Fast-food service workers

Offer New Job Prospects for the Future

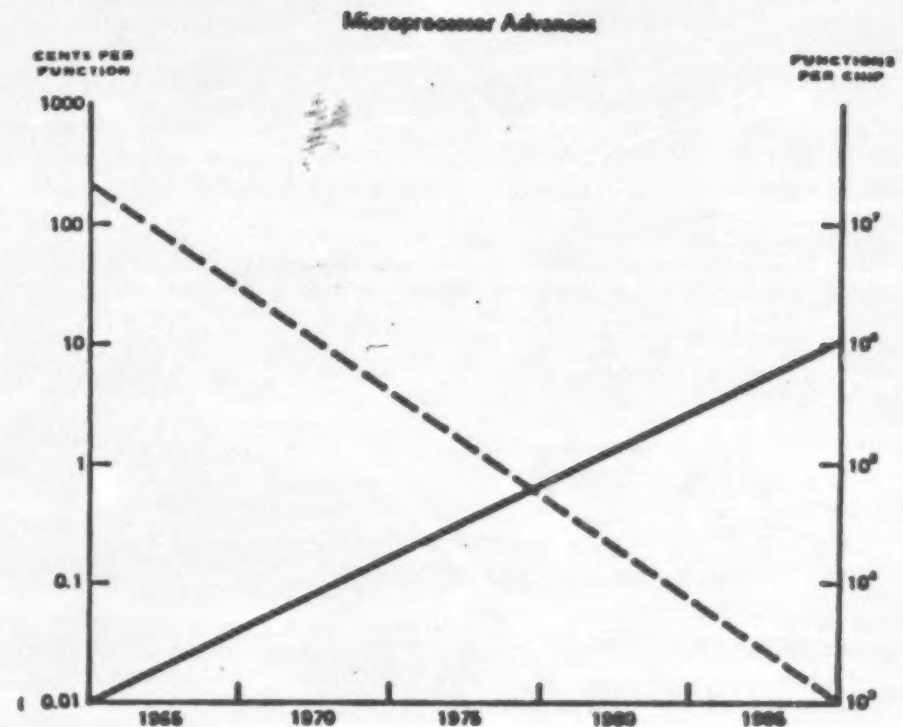
- Industrial-robot production
- Energy technicians
- Industrial-laser processing
- Genetic engineering
- Bionic medical electronics

Source: Bureau of Labor Statistics.

2 Technology

o Technology may have a more pervasive effect on human resource planning in the eighties than any other factor.

- The drivers for this are the truly incredible reduction in cost per function for information processing over the last several decades, coupled with the exponential growth in the number of components that can be built into a single microprocessor chip.
- This has led to quantum jumps in the application of minicomputers, microprocessors and a host of related devices. Some have called this the second industrial revolution, and the process shows no sign of slowing down.
- The effect on work has already been profound--reaching every functional area--and the implications for the future are just as profound.
- The structure of work will be significantly altered. Just as an example, the Society of Manufacturing Engineers, in one of their Delphi forecasts, predicts that by 1990, half of the workers on the factory floor will be white-collar engineers and technicians keeping robots and microprocessors working.



How Many Robots?

Much public attention today is focused on robots. Managers tend to regard robots as automatic solutions to economic problems, while workers fear being displaced by them. Much of the impact of robotics will depend on how fast and where the technology is implemented. The Upjohn Institute for Employment Research recently completed a study which forecasts robot population. The following table compares Upjohn's forecast with estimates of the 1981 robot population made by the Robot Institute of America.

Comparison of 1990 and 1981 U.S. Robot Populations

Application	Autos		All Other Manufacturing		Total 1990		Total 1981 ^{1/}
	Range of Estimates		Range of Estimates		Range of Estimates		
	Low	High	Low	High	Low	High	
Welding	3,200 (21.3%)	4,100 (16.4%)	5,500 (15.7%)	10,000 (13.3%)	8,700 (17.4%)	14,100 (14.1%)	1,500 (36%)
Assembly	4,200 (28.0%)	8,800 (35.2%)	5,000 (14.3%)	15,000 (20.0%)	9,200 (18.4%)	23,800 (23.8%)	40 (1%)
Painting	1,800 (12.0%)	2,500 (10.0%)	3,200 (9.1%)	5,500 (7.3%)	5,000 (10.0%)	8,000 (8.0%)	540 (13%)
Machine Loading & Unloading	5,000 (33.3%)	8,000 (32.0%)	17,500 ^{2/} (50.0%)	34,000 (46.0%)	22,500 (45.0%)	42,000 (42.0%)	1,690 ^{2/} (40%)
Other	800 (5.3%)	1,600 (6.4%)	1,800 (10.9%)	10,500 (14.0%)	4,600 (9.2%)	12,100 (12.1%)	400 (10%)
Total	15,000 (100%)	25,000 (100%)	35,000 (100%)	75,000 (100%)	50,000 (100%)	100,000 (100%)	4,170 (100%)

^{1/} Robot Institute of America estimate.

^{2/} Combines foundry and machine loading categories.

The figures show that the robot population will increase from less than 4,200 in 1981 to the 50,000 to 100,000 range by 1990; between 25% and 30% of these robots will be installed in the major auto manufacturing companies' plants.

Although the 1990 range (50,000 to 100,000) appears wide, it is actually reasonable to use such a wide band because it allows for economic uncertainty. The "Low" columns in the table assume a continuation of the post-1978 economic climate of high real interest rates and slow (2%) real GNP growth throughout the 80s, whereas the "High" columns assume a decline in real interest rates and a return to 1970-78 annual real GNP growth of 3.5%.

MERCHANDISE TRADE BALANCE
(billions of \$)

<u>Year</u>	<u>Exports*</u>	<u>Imports**</u>	<u>Net Balance</u>
1962	\$ 20.7	\$ 16.5	+ \$ 4.2
1972	48.4	58.9	- 10.5
1982	207.1	154.9	- 47.8

*Merchandise exports are total domestic (excluded foreign exports)

**Merchandise imports are general imports adjusted for c.i.f. value in 1972 and 1982. Prior to 1967 only customs value data are available

Source: Economic Report of the President, February 1983, p. 280